

CLAIMS

I claim:

1. An interleaved friction plate device in which the plates can be clampingly engaged to synchronize accelerate or decelerate a load means for cooling the friction surfaces using a multiplicity of external confined impeller vanes on the outside diameter of the rotating plate to impact a fluid reservoir and impart inward flow thru passages to cool and lubricate the sliding friction surfaces during rotational operation.
2. The device as set forth in Claim 1 in which inward flow occurs during a portion of a revolution of rotation and outward flow occurs during the remainder of the revolution to provide inward and outward friction surface cooling during a revolution cycle.
3. A wet friction plate comprising of a core with attached annular friction discs the core having a multiplicity of pumping impeller vanes extending from its outer diameter acting as pump impellers in cooperation with mating side plates to ingest coolant and impart inward flow thru the friction surface grooving to provide cooling during rotation of the friction plate.
4. The device as set forth in Claim 3 in which an individual pressure chamber is defined by confining mating side plate walls to the impeller vane, the impeller vane pumping surface and the friction plate core outside diameter between the pumping surface of an impeller and the back side of the adjacent leading impeller vane.
5. The device as set forth in Claim 3 in which the individual pressure chamber between the impelling surface and the back of the adjacent ahead leading vane may form a circular chamber for a large portion of its periphery.

6. The device as set forth in Claim 3 in which each impeller vane has a leading outer tip and following backward or trailing slant or curvature with respect to the direction of rotation of the rotating disc.
7. The device as set forth in Claim 3 in which coolant accelerated by the leading pumping surface of an impeller vane may follow the friction plate core outer diameter between vanes and abut a decelerating cavity formed in the rear surface of the leading adjacent impeller vane to discharge inwardly thru the friction surface grooving to cool and lubricate the friction surfaces.
8. An interleaved friction plate device in which the plates can be clampingly engaged to synchronize, accelerate or decelerate a load means for cooling the friction surfaces using a multiplicity of external confined vanes on the outside diameter of the rotating plates to ingest coolant from an enclosing housing reservoir or an external supply source directed into the pressure chamber inlets described as two adjacent vanes, and their mating side walls.
9. The device as set forth in Claim 4 in which the inlet area for an individual pressure chamber is made up of the space between two adjacent impeller vane plate side walls and the outer peripheral distance between adjacent impellers.